

Application No. 10/024,269
Amendment dated December 14, 2005
Office Action dated September 7, 2005

Remarks

Claims 45-50, 52, 61 and 62 have been amended; claims 63 and 64 have been canceled; and new claim 65 and 66 have been added. Claims 45-52, 58-62 and 65-66 remain in the application, and re-examination and reconsideration of the application are respectfully requested.

Applicants appreciate the opportunity for a telephone interview with the Examiner on December 13, 2005. Three proposed amended independent claims numbered 45a, 45b and 45c were faxed to the Examiner on December 6 for review prior to the interview. In a first telephone conference, Applicants identified elements in the three claims that Applicants considered important in distinguishing over the cited references, for example, the open space below the support bars (proposed claim 45a), the absence of a planar surface perpendicular to the rack walls (proposed claim 45b) and the absence of a horizontal surface (proposed claim 45c). In a second telephone conference following a consultation with a Supervisory Examiner, the Examiner indicated that proposed claim 45a was allowable, but that claims 45b and 45c required further review by the Examiner. In this Amendment and Response, Applicants submit that currently amended claim 45 corresponds with proposed claim 45a. New claim 65 corresponds to proposed claim 45b with the exception that the description in lines 26-29 of proposed claim 45b has been substantially revised. New claim 66 corresponds to proposed claim 45c.

The slide case recited in claims 45, 61, 65 and 66 addresses two different functions. First, referring to Figs. 1-3, the slide case 20 includes a rack 24 that is removable from an assembly of a base 22 and cover 28. The removable rack 24 is used to support slides 26 during processing or other treatment of the slides without having to transfer the slides to another processing container or rack. Processing may include coating processes and other surface treatments to facilitate binding, for example, binding of DNA as disclosed on pages 7 and 8, prior to affixing a specimen, or during hybridization, staining and other types of processing. After specimens are affixed, the removable rack 24 and slides 26 are typically dipped or immersed into processing tanks containing fluid reagents or stains. Therefore, the removable rack 24 must permit substantial drainage of liquids, so that "carry-over" of reagents and stains

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from one processing tank to the next is kept at a minimum. Any sort of structure or horizontal surface, even one designed with drain holes, that is below the slides contributes to carry-over as compared to a completely open space. Claims 45, 61, 65 and 66 recite a rack 26 comprising four planar walls with rigidly connected ends and slide supporting cantilevered support bars 32 attached to respective inner surfaces 42 of opposing side walls 32. Thus, the removable rack 24 has no structure or horizontal surface below the slides 26 to trap reagents, stains or other processing liquids, thereby minimizing carry-over contamination.

A second function of the slide case 20 recited in claims 45, 61, 65 and 66 is provided by a base 22 in which the rack 24 is removably positionable and a cover 28 that is positionable on the base 22. The assembly of the base 22 and cover 28 fully enclose the removable rack 24 and slides 26 and thus, prevent outside contamination during transport. This is especially important when the slides contain special surface treatments and/or samples of tissue, cells or other materials for analysis, and maintenance of surface or sample integrity is crucial. As additional protection, upper edges 78 of the slides 26 held between the support bars 32 contact ribs 54 on the cover 28, thereby securing the slides 26 against movement during transportation of the slide case 20 and preventing slide breakage. Thus, the assembly of the rack 24 between the base 22 and the cover 28 permit safe transportation of pre-treated slides and/or slides bearing specimens.

Claims 45-52 and 58-64 are rejected under 35 U.S.C. §103(a) as being unpatentable over Davis et al. (U.S. Patent No. 3,960,268) in view of Japanese Publication No. 52-118,390, hereinafter "390", and Seaton et al. (U.S. Patent No. 5,736,102). Claims 63 and 64 have been canceled, and new claims 65 and 66 have been added. Therefore, the following discussion will be with respect to claims 45-52 and 58-62 as amended and new claims 65 and 66.

Davis et al. (U.S. Patent No. 3,960,268) relates to a universal frame for securing pieces of sheet material for processing, storage and use with a carton for shipment. The detailed structure of Davis et al. is discussed in Applicants' Amendment and Response dated May 10, 2005 and will not be repeated here. Davis et al. makes no reference to processing and/or staining slides. The teaching at column 3, lines 35-39,

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does not disclose processing of slides, but rather, relates to drainage of a cleaning solution for the rack. Applicants submit that Davis et al. does not teach or otherwise disclose anything related to processing of slides with specialized coating reagents, and particularly not to processing specimen-bearing slides through a series of reagents and/or staining solutions. Thus, for the limited purposes of storage and transport of slides, the Davis et al. structure having a surface on the base 16 below the slides 5 that does not inherently promote drainage, as recited at lines 39-44, is reasonable. Applicants submit that it is not crucial whether remnants of solution used to clean the slides 5 remain on the racks 10, 11 if the only purposes of the racks are for storage and/or transport. If Davis et al. intended the racks 10, 11 to be used for processing and staining of slides, including specimen-bearing slides, Applicants submit that the horizontal surfaces of base 16 below the slides 5 would present a problem with regard to carry-over of reagents or stains.

With regard to storage and transportation, Davis et al. teaches use of a heat shrinkable envelope. Such a method is practical for sealing a sterile, hygienic loaded frame (column 1, lines 65-68) loaded with unprocessed slides, but it is not necessarily applicable to preprocessed slides and/or specimen-bearing slides, since some types of coatings or specimens may be heat-sensitive. Also, it does not offer the level of protection against breakage provided by enclosure within a solid case, such as the base and cover of the present invention. So, with regard to the transportation and storage aspects of the present invention, Davis et al. contributes little except for the concept of planar sloping sides (17) with diamond shaped apertures (20). Davis et al. does not teach use of resilient sloping sides or a cover and base for enclosing the rack in a stable manner. Further, since Davis et al. does not teach or suggest use of the slide rack for processing and staining tissue specimens, Applicants submit that Davis et al. has little relevance to the present invention.

The '390 reference was also discussed and distinguished in Applicants' Amendment and Response dated May 10, 2005; and that discussion will not be repeated here. The '390 reference is clearly limited to transportation and/or storage of slides and is not intended for use during processing or staining of slides or specimens contained on slides. '390 teaches a container that completely encloses the slides and

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is not open for, or otherwise amenable to, the exposure of slides to liquid reagents and/or staining solutions since there is no means for draining solutions.

Seaton et al. relates to a positioning system for moving one or more test samples to various stations of a biological sample testing machine. Referring to Fig. 1, a biological test sample positioning system 100 has four independent motor driven paddles to pull a boat 22 loaded with a cassette of test cards 28 and test tubes 30 across a base pan 24 to several discrete processing stations. The boat 22 has a flat floor 74 which contains any spills from the test tubes, Col. 10, lines 64-65. The base pan 24 has drain holes 25A, 25B that allow any spilled fluids on the base pan 24 to be carried from the machine. The test cards 28 themselves contain reagents and are not intended for containing specimens, see column 4, lines 3-24. Therefore, the test cards 28 are not processed by dipping or immersion into tanks of reagents or any other type of method used for processing slides. Instead, the test cards 28 provide reagents. Seaton et al. discloses biological sample contained within test tubes 30. Seaton et al. has no relevance to the processing of slides bearing samples. Even if the invention taught by Seaton et al. is adapted to hold slides with biological specimens instead of test tubes, holes 25A, 25B at the bottom of a base pan 24 do not serve the same purpose as the open bottom of the rack of the present invention, namely, facilitation of contact with liquid reagents and drainage of such liquids from slides.

In order to establish a prima facie case of obviousness, it is necessary that the Office Action present evidence, preferably in the form of some teaching, suggestions, incentives or inference in the applied prior art or, in the form of generally available knowledge, that one having ordinary skill in the art would have been led to arrive at the claimed invention.

Applicants submit that a prima facie case of obviousness is not made because Davis et al., '390 and Seaton et al. in combination do not teach, suggest or motivate one to provide the following features recited in claims 45, 61, 65 and 66. Claims 45, 61, 65 and 66 all recite a slide case or apparatus having

- a rack for supporting a slide outside the case during a slide processing operation, the rack having
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- deflectable support bars cantilevered from walls of the rack for supporting ends of a slide and having respective deflectable longitudinal edges spaced away from a lower edge or portion of the rack;
- an interior space having
 - no structure between the deflectable longitudinal edges as recited in claims 45 and 61, or
 - no planar surface substantially perpendicular to the walls below the slide as recited in claim 65, or
 - no substantially horizontal surface forming an acute angle with either side wall below the slide as recited in claim 66;
- a base comprising four walls in which the rack is removably positionable; and a
- a cover positionable on the base and having a projection for pressing against and securing the slide.

In contrast, the '390 wafer transporting container is used only for transporting wafers and is not intended for use in a wafer processing operation. The wafer support 3 has opposed support parts 7 extending from projections 9, which are joined by a horizontal and planar connector 6 that extends below the projections 9 and support parts 7 across a bottom of the container. Thus, the space below the projections 9 and support parts 7 is not open and would not provide suitable drainage if the wafer support was used in a wafer processing operation. Davis et al. does not have four planar walls with rigidly connected ends, nor deflectable longitudinal edges, but Davis et al. does have a substantially horizontal surface forming an acute angle with side walls below the slide.

In view of the above, Applicants submit that claims 45-52, 58-62 and 65, 66 are patentable and not obvious under 35 U.S.C. §103(a) over Davis et al. in view of '390 and Seaton et al.

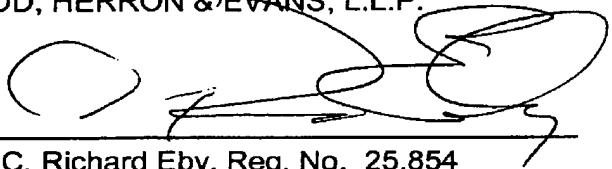
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Applicants respectfully submit that the application is now in condition for allowance and reconsideration of the application is respectfully requested. The Examiner is invited to contact the undersigned in order to resolve any outstanding issues and expedite the allowance of this application.

Respectfully submitted,

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